

Title (en)
AUTOMATED CLASSIFICATION AND TAXONOMY OF 3D TEETH DATA USING DEEP LEARNING METHODS

Title (de)
AUTOMATISIERTE KLASSIFIZIERUNG UND TAXONOMIE VON 3D-ZAHNDATEN MIT TIEFLERNVERFAHREN

Title (fr)
CLASSIFICATION ET TAXONOMIE AUTOMATISÉES DE DONNÉES DE DENTS 3D À L'AIDE DE PROCÉDÉS D'APPRENTISSAGE PROFOND

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Application
EP 18778536 A 20181002

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Abstract (en)
[origin: EP3462373A1] The invention relates to a computer-implemented method for automated classification of 3D image data of teeth comprising: a computer receiving one or more of 3D image data sets, a 3D image data set defining an image volume of voxels, the voxels defining a 3D tooth model within the image volume, the image volume being associated with a 3D coordinate system; the computer pre-processing each of the 3D image data sets, the pre-processing including positioning and orienting each of the 3D tooth models in the image volume on the basis of the morphology of teeth, preferably the 3D shape of a tooth and/or a slice of the 3D shape; and, the computer providing each of the pre-processed 3D image data sets to the input of a trained deep neural network and the trained deep neural network classifying each of the pre-processed 3D image data sets on the basis of a plurality of candidate tooth labels of the dentition, wherein classifying a 3D image data set includes generating for each of the candidate tooth labels an activation value, an activation value associated with a candidate tooth label defining the likelihood that the 3D image data set represents a tooth type as indicated by the candidate tooth label. The candidate tooth labels possibly being used to determine the most feasible assignment of labels to 3D image data sets in the case of all 3D image data sets originating from a single dentition.

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